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OFFICINALIS L. (MOLLUSCA : CEPHALOPODA),
FROM THE GULF OF TUNIS**

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FECUNDITY OF THE CUTTLEFISH, *SEPIA OFFICINALIS* L. (MOLLUSCA : CEPHALOPODA), FROM THE GULF OF TUNIS

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2025 Salammbô, Tunisie

CEPHALOPODA, *SEPIA OFFICINALIS*, INDIVIDUAL FECUNDITY, GLOBAL FECUNDITY

For fisheries purposes, fecundity of Cephalopod females is usually determined by counting the number of eggs contained in the ovary of mature individuals. The mechanisms of sperm storage and egg laying in Cephalopods ensure a very high rate of fertilized eggs, especially in species where eggs are laid singly, such as *Sepia officinalis*.

The individual and the global fecundity were determined from the spawning population in the Gulf of Tunis in 1980. The spawning period lasts from February to June (Najai, 1983). Smooth, mature eggs measure from 6 mm in diameter in the smallest individuals to 10 mm in females of the largest size classes. *Sepia officinalis* usually lays eggs over several days or weeks (Boletzky, 1983). In mature females, eggs of all developmental stages are present and it is not yet known how many eggs may become mature during a prolonged individual spawning period in nature. Laboratory observations, however, have shown that very small eggs may reach full maturity within a few weeks (Boletzky, in press), as surmised by Voss (1983). To estimate individual fecundity, smooth eggs and reticulated eggs of large size (6 to 10 mm, according to the size of the female) were counted (Ezzedine-Najai, 1984) for females of the size classes of 80 to 190 mm dorsal mantle length (Table I). Large females have more mature and near-mature eggs than small ones. However, the females of the small to medium size classes (90 to 150 mm ML) contribute more to the global fecundity of the spawning population than large individuals because they are more numerous (Table I). The number of eggs laid between February and June 1980 in the Gulf of Tunis was estimated at 16 mil-

Table I. — Size distribution of *Sepia officinalis* females fished between February and June 1980 in the Gulf of Tunis, with corresponding fecundity values in terms of mean numbers of near-mature and mature ovarian eggs (based on a sample of 743 individuals).

Size class mm	Number of females (A)	Individual mean fecundity (B)	Deduced global fecundity (A x B)
80	2 388	99	236 412
90	9 553	163	1 557 139
100	12 737	181	2 305 397
110	17 115	228	3 902 220
120	10 747	235	2 525 545
130	6 766	230	1 556 180
140	4 776	195	931 320
150	3 980	383	1 524 340
160	1 592	345	549 240
170	1 194	365	435 810
180	796	420	334 320
190	398	543	216 114

lions. This might correspond to the effective fecundity of the spawning population, but one should keep in mind that the potential individual fecundity of *Sepia officinalis* is about four times higher (Boletzky, in press).

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Size class (mm)	Number of females (A)	Individual mean fecundity (B)	Global fecundity (A x B)
80	238	99	23562
90	957	103	98571
100	1277	181	232077
110	1512	228	343764
120	1077	222	239154
130	676	220	148720
140	476	182	86632
150	190	182	34580
160	157	182	28566
170	194	202	39198
180	76	220	16732
190	109	242	26378

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